

Further observations on the species of *Utetheisa* Huebner (Lepidoptera: Arctiidae) in the western and central Pacific with the description of a new species from Niue Island

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Tonga:

Both *marshallorum* and *stigmata* were collected on Tongatapu in 1975 by Dr. P. A. Maddison who also collected *marshallorum* larvae from *Messerschmidia*. The 30 Tongatapu specimens of *marshallorum* we have examined are of similar size to specimens from Fiji but the black forewing markings are more pronounced, particularly the band of postmedial spots (Plate IX, fig.1). We have examined two specimens from the Ha'apai Group in the BMNH collection and these are similar to the specimens from Tongatapu.

Tokelau Islands:

Only *marshallorum* is known from the Tokelau Islands. The six specimens in BMNH are large (forewing length 19-21 mm) and well-marked (Plate IX, fig. 2) resembling specimens from Swain's I. (see above).

Phoenix Islands:

There are two specimens of *marshallorum* in the BMNH collection from Canton I.: they are small (forewing length 14 mm) with very slightly reduced black markings.

Tuvalu (late Ellice Islands):

H. S. Robinson visited Funafuti in 1973 and 1974: on the first visit the island had been devastated by a severe hurricane and an immense tidal wave had swept across the entire atoll. This wave had destroyed all the above-ground vegetation of *Messerschmidia* and small suckers were beginning to sprout from the roots. These suckers were infested with larvae of *marshallorum* and one or two adults were taken. In 1974 the *Messerschmidia* bushes were found to have re-established themselves and all stages of *marshallorum* were abundant. The resistance of *marshallorum* on Funafuti to natural disasters demonstrates its resilience. Our five specimens of *marshallorum* from Funafuti are large (forewing length 18-21 mm) and the black markings are slightly reduced: red markings are rather more pronounced than in the Fijian population and some of the red spots are coalesced (Plate IX, fig. 3). In addition to Funafuti, *marshallorum* is known from Nui (1 ♀, 22.ix.1924, Buxton & Hopkins — BMNH), Nukufetau (Butler, 1885) and Niulakita (Manser, 1973). There are three specimens collected by Woodford and labelled 'Ellice Is.' in the BMNH collection and these are, presumably, the Nukufetau specimens listed by

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Butler. They are very similar to our specimens from Funafuti. Two other specimens in BMNH labelled 'Ellice Is.' have the registration numbers 78-2 and 87-50. The latter specimen was collected by Gervase Mathew, and the former may have been collected by Rev. J. S. Whitmee. Mathew's specimen is faded and has reduced black markings but Whitmee's specimen is heavily marked with black.

Gilbert Islands:

U. p. marshallorum is recorded from Onotoa (Moul, 1954), Tabiteuea (Butler, 1885), Abemama (Viette, 1954), Tarawa (Viette, 1954) and Makin/Butaritari (Moul, 1954). Searches of Tarawa, Butaritari and Abemama by H. S. Robinson in 1973 revealed *Messerschmidia* but not *Utetheisa* and a visit to Tarawa a year later was also unsuccessful. Woodford's specimens from Tabiteuea (labelled 'Gilbert Is.') are in BMNH — there are two males which are not as large as specimens from Tuvalu and which do not have such extensive red markings. We have examined the specimens (now in the Muséum national d'Histoire naturelle, Paris) collected on Abemama and Tarawa in 1951 by Catala and published by Viette (1954). The three specimens from Abemama are similar to those of our series from Funafuti but the female from Tarawa is large (forewing length 19.5 mm) with accentuated black markings and is very similar in pattern to Whitmee's 'Ellice Is.' specimen.

Marshall Islands:

Rothschild's syntype series of *marshallorum* contained nine specimens. We have found six of these in the BMNH collection and a further three specimens from the Marshall Is. collected by Mathew. These specimens were never part of Rothschild's collection and are unlikely to represent the missing three syntypes. The specimen bearing a pink label with '*Utetheisa pulchelloides marshallorum* Rothschild. Type' in blue-black ink and white labels reading 'Marshall Ids' and 'Rothschild Bequest B.M. 1939-1' is here designated as lectotype (Plate IX, fig. 4). The Marshall Islands specimens are large (forewing length 18-21 mm), have well-developed red and black markings (Plate IX, fig. 5) and are similar to specimens from Funafuti. Two specimens, however, including the lectotype, have reduced black markings and only a narrow apical black band in the hindwing.

Wake Island:

The three specimens of *marshallorum* from Wake I. in the BMNH collection are small (forewing length 16 mm) and are not as heavily marked with red as specimens from the Marshall Islands.

Niue Island:

In May and June 1975 Dr. P. A. Maddison collected a number of specimens of *stigmata* at light on Niue I. He also located a stand of *Messerschmidia* from which he collected a few specimens of a *Utetheisa* which appeared to him to be abnormal. These specimens unfortunately decayed in transit from Niue, but enough remained to suggest to us that they did

not represent *pulchelloides* in any of its known guises. In September 1975 Dr. Maddison returned to Niue and made a further attempt to obtain *Utetheisa* from the *Messerschmidia*. He returned to Fiji with a fine series of adults (Plate IX, fig. 14) and several larvae, one of which was reared to its final instar by H. S. Robinson and then preserved as a larval skin (Plate IX, figs. 17, 18). We consider Maddison's Niue *Utetheisa* to be a new species allied to *U. salomonis* Rothschild and (more distantly) to *U. clareae* Robinson. It is described below.

Specimens of *stigmata* from Niue are similar to *stigmata* from other localities in the Pacific: we have examined 22 specimens. Niue represents the easternmost limit of *stigmata*.

Cook Islands:

U. p. marshallorum is the only *Utetheisa* known from the Cook Islands. Dr. P. A. Maddison collected *marshallorum* on Aitutaki and Rarotonga in 1975 and we have also examined specimen from these atolls in the collections of the Auckland Institute and Museum and the Department of Scientific and Industrial Research, New Zealand. Specimens from the Cook Islands are large (forewing length 18-20 mm); individuals from Aitutaki have heavy black markings (Plate IX, fig. 6) but those from Rarotonga have the black markings of the forewing reduced and the size of the red markings increased with coalescence of many of the spots (Plate IX, fig. 7). We have also examined specimens from Mitiaro Atoll and these have heavier black markings in the forewing than specimens from Aitutaki (Plate IX, fig. 8).

Line Islands:

The Government of the Gilbert and Ellice Is. Colony mounted an expedition to the Line Islands in 1974 (Paeniu *et alii*, 1974). Ten islands were visited and the expedition returned to Tarawa shortly before H. S. Robinson's visit to the Gilbert Islands. Collections of entomological specimens were made by Dr. H. Grossmann and Mr. M. E. H. Vickers; the last named also recorded details of the vegetation of the islands visited. *Messerschmidia* was recorded from Flint I. and Caroline I. and Dr. Grossman and Mr. Vickers presented H.S.R. with a series of *marshallorum* collected from Caroline Island. The nine specimens from Caroline exhibit an unusual range of variation. They are smaller than specimens from the Cook Islands, having a forewing length of 16-18.5 mm. Two specimens have black markings of normal density (Plate IX, fig. 9) and resemble specimens from Fiji: in the remaining seven examples, the black forewing markings are reduced (as in Tuvalu specimens) and in two of these the black in the hindwing is also reduced. In four of the specimens with reduced black forewing markings the red spots are enlarged and coalesced; one of these specimens is extremely aberrant with red suffusing most of the postmedial fascia (Plate IX, fig. 10).

The Vickers-Grossmann collections from Caroline I. include a single larva of *marshallorum* preserved in alcohol. In lateral view (Plate IX, fig. 15) the specimen is almost typical (compare pl. X, fig. 2 in Robinson & Robinson, 1974) but in

dorsal view (Plate IX, fig. 16) it is similar to *clareae* or *madisoni*, the dorsal stripe being continuous. The black markings of this larva are generally reduced in comparison with examples from the western Pacific. Further larval material may provide evidence of consistent differences in larval pattern between populations of *marshallorum* similar to the pattern differences in adults.

Tuamotu Archipelago:

We have examined single specimens of *marshallorum* from Takapolo I. and Makemo I. in the BMNH collection: these have moderately heavy black markings and resemble specimens from Aitutaki (Cook Is.) as do two of the four BMNH specimens from Hikueru I. The other two specimens from Hikueru have reduced black markings and coalesced red spots like some examples of the Caroline and Funafuti populations. There is a series of 32 specimens from Napuka I. in BMNH: these have reduced black markings in both fore and hindwings and the red spots are coalesced (Plate IX, fig. 11). One example approaches the degree of red suffusion exhibited in the Caroline specimen but has a more heavily marked hindwing. A single example from Fakarava I. is similar to examples from the Napuka population. The Napuka specimens are of medium size with a forewing length of 17-19 mm.

Henderson Island:

Six specimens of *marshallorum* examined (BMNH) have heavy black markings (Plate IX, fig. 12) as in the two specimens from Hikueru: the red spots are enlarged and several are coalesced. The combination of heavy black and red markings is unusual. The forewing length of the specimens ranges from 17 to 20 mm.

(To be continued)

THE CLOAKED PUG: *EUPITHECIA ABIETARIA* GOEZE IN BEDFORDSHIRE. — The article by J. Briggs on the above named moth (1979, *Ent. Rec.*, **91**: 220), has prompted me to record the fact that this moth has also been found in Bedfordshire.

Whilst running a m.v. trap in a mainly coniferous part of Maulden Wood on the evening of 4th July 1977, several specimens of this moth were obtained — this, as far as my notes show, is the first time that this species has been recorded from Bedfordshire. — V. W. ARNOLD, Moth Recorder for the Bedfordshire Natural History Society, 96 St. Augustine Avenue, Luton, Beds.

BLAIR'S SHOULDER-KNOT: *LITHOPHANE LEAUTIERI* BOISD. IN WALES. — I captured in 1979, three males of this moth on 8th October, and one male on the 12th October. They were taken in my back garden here at m.v. light. — D. R. STEPHENSON, "The Haven", St. Mary Church, Cowbridge, S. Glamorgan, S. Wales. [This is an interesting extension of range of this species and perhaps the furthest west locality in Britain yet known. — J.M.C.-H.]